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Protestant Ethic, Status Seeking, and Economic Growth

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Abstract

Commodities do not only serve the purpose of satisfying direct needs in the production and consumption process. Some of them can also be used to display social status and to affect the position of an individual in society. This paper addresses the question under which circumstances status-seeking behaviour may lead to permanent economic growth in a simple model. The protestant ethic is interpreted as a special case of status-seeking behaviour. It is shown that societies composed of status-seeking individuals may grow faster than less status-oriented societies.
Keywords: Protestant ethic, social status, economic growth

JEL classifications D91, D92, P16, ZOO

Introduction

When economists investigate the determinants of economic growth, they usually look at the supply of the factors of producion. Population growth, the availability of natural resources, and the increase in technological knowledge and human capital are identified as the major driving forces of economic growth. This is true not only for the classical but also for the new endogenous growth literature. See Romer (1986,1990), Lucas (1988), Becker, Murphy and Tamura (1990), and Grossman and Helpman (1991). In this frame-work, economic growth is attributed to the accumulation of factors of production and to increasing external returns to scale. Due to external economies of scale, the long-run equilibrium to which firms and/or households adjust becomes a moving target, and it is moved by the action which they undertake to reach it.

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This paper is an attempt to model the ideological factor underlying economic growth. Economists are used to consider models in which preferences are constant and human beings draw satisfaction from consumption only. However, in societies in which basic economic needs are satisfied, other things become important for the determination of an individual's well-being. One of them is the relative position of a person in society. Since an individual's relative position can only be increased at the cost of deteriorating another individual's position, there exist negative externalities. This paper will show that these externalities may have a positive impact on the economic growth potential of a society. The mechanism is similar to the one driving the supply-side models of endogenous growth. The equilibrium continuously changes its position and the individual agents are unaware of the fact that they are propelling the squirrel wheel which moves the equilibrium.

I. Protestant Ethic and the Quest for Social Status

There are (at least) two ways in which the relevance of an individual's relative position in society for her or his well-being can be motivated. One of them is related to the individual's perception of the next world whereas the other is based on desires con cerning earthly things. We shall refer to them as 'the Protestant ethic' on the one hand and 'the quest for social status' on the other.

The term 'Protestant ethic' was coined by Max Weber (1904). He argued that the rise of capitalism had been preceded by a change in preferences, attitude and perception of the world. The hedonic life-style of rococo was succeeded by a puritan philosophy, the so-called Protestant ethic, which put asceticism into the centre of human aspiration. Like all kinds of sensuality, the consumption of commodities in excess to basic needs was considered to be displeasing god. In such a social environment, accumulated assets were the visible evidence of asceticism, thriftiness, and piety. According to Weber, this generated the willingness to save and accumulate capital which was the precondition for economic growth and the rise of capitalism.

Since norms are social phenomena, it does not make too much sense to assume that an absolute measure of asceticism exists which people are striving for. Instead, one

may argue that there is a socially determined standard which may change over time. The more ascetic the average person in a society is, the more ascetic must an individual be to fulfil the social norm. Thus, there is a negative externality since, by one's own attempt to lead a life pleasing to god, one drives the standard up for other people.[1]

Another possibility to introduce externalities into a model of individual behaviour is generated by the individual's endeavour to earn recognition and esteem, i.e. to maximise her or his social status subject to some constraints. Social status can be obtained by the command over commodities which display social status, so-called positional goods. This idea is not new in economics. See Ancil and Hakes (1991). Rae's (1905) and Veblen's (1899) books are early studies concerned with socially determined individual behaviour. The issue has been taken up later by Duesenberry (1949), Leibenstein (1950), Hirsch (1976), Frank (1985a) and others. The quest for social status produces externalities since an improvement of the position (rank in society) of one person implies the deterioration of the position (rank in society) of an least one other person. These externalities can be internalised by the state via taxes (Boskin and Sheshinsky (1978), Layard (1980) and Seidman (1987)) or by limiting the consumption possibility sets of people, e.g. by urging them to purchase goods that do not affect status like social security (Frank (1985b)). In a dynamic setting, one may argue that a rat race in which each person tries to surpass her or his neighbours increases the demand for goods that display status. This raises the level of economic activity needed to produce these goods and, therefore, may cause demand-driven economic growth.[2]

Status is displayed by positional goods. Two types of positional goods will be considered in what follows. On the one hand, they may be consumption goods like Rolex watches, Armani suits or prestigious cars. This is the way we are used to display status or observe other people displaying status. In former times, there may have been other ways of demonstrating status:

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[1] A simpler line of arguing would be based on the conjecture that space in heaven is scarce such that only a limited number of individuals are elected to ascend. Such beliefs may have been disseminated much more in former times than they are today. This common-pool problem also involves negative externalities.

[2] Similar ideas have been expressed by Sombart (1913) in a largely neglected study on vanity and luxury goods consumption. He showed that status seeking and the demonstration of wealth by the European nobles of the fifteenth to seventeenth centuries laid some of the major foundations of the growth potential of future capitalism.

There seem to be, in modern times, and in particular communities, two circumstances that may lead an individual, from a mere regard to his personal interest, to persue the paths of sober industry and frugality, and, consequently, to make an extended provision to the wants of others. These seem to be the desire of personal, and family aggrandizement, and a wish, conjoined with the pursuit of both, to rank high in the estimation of the world. The acquisition of fortune, is a road open to the ambition of all men, and, in present days, is the only road open to that of most men. The mere desire to rise in the world, and envy of the superiority of other men, may excite many to enter on this path, and preserve them steadily in it. [Rae (1905), pp. 59-60]

This view implies that not consumption goods but wealth and assets create status. Thus, as in the case of the Protestant ethic, capital accumulation becomes part of the individual's objective function. This will be considered in the theoretical model which is the basis of the following investigation. It is a simple Ramsey-type (Ramsey (1928)) optimal growth model in which utility is not derived merely from consumption but also from social status which itself depends on the capital stock accumulated by the individual under consideration and her or his fellow human beings. Similar models, in which the capital stock is an argument in the utility function, have been analysed by Steedman (1981) and Konrad (1990). Steedman (1981) did not consider externalities. Konrad (1990) was interested in welfare comparisons and in the distribution of wealth in a society in which there are people who are interested in social status and others who are not. Additional models have been analysed by Cole/Mailath/Postlewaite (1992), Corneo/Jeanne (1995), and Fershtman/Murphy/Weiss (1996). It has been shown in these models that capital as a status good may accelerate economic growth in the medium or even in the long term. The addresses the same question but comes to different results. The reasons are that (i) capital depreciates in this model and (ii) external economies to scale may induce endogenous economic growth. In a first step, I shall present the model and derive optimality conditions. Economic-growth paths will be analysed afterwards different scenarios. Finally I shall employ another variant of the model to analyse modern status seeking where consumption goods rather than assets are employed to display social status.

II. The Model

Consider an economy consisting of many identical units which are called individuals or households. Since these units are identical, there are no gains from trade and, therefore, it is assumed that they are autarchic. Each household produces a multi-purpose commodity which can be used for consumption or as an input for future production. Labour supply is assumed to be fixed. We assume a technology along the lines of *Romer* (1986), where a household's output depends on the capital used by this household, k, and on the capital used by the average household in this economy, *K*. Both are measured at time t but the time argument is dropped for convenience. Ex post, *k* and *K* are identical since all households are identical. The output is *f(k,K)*. *f(.,.)* is an increasing strictly concave function of *k* with the Inada conditions *(f'(0,.)* $= \infty$ and *f'(*∞*,.) = 0)* being satisfied and an increasing function of *K*. An example for such a function with is the Cobb-Douglas production function,

$$f(k,K) = k^{a} K^{1-a}$$

with decining private and constant social returns to scale. This example will be used later on to illustrate some of the results.

Net investment k equals output minus consumption, *c*, minus capital depreciation where *m* is the depreciation rate. It is assumed that there are some technological limits to the growth of the capital stock such that infinite growth rates are impossible.[3]

$$\dot{k} = f(k,K) - c - mk \leq \bar{g}k \tag{1}$$

Each household intends to maximise the present value of its utility over an infinite time horizon. Utility depends on consumption and on the position of an individual in society. This position is gained by the accumulation of assets. Whether the underlying motive is ethical (demonstration of an ascetic god-pleasing life-style) or earthly (demonstration of material wealth) does not matter here. What matters is the occurrence of the capital stock in the utility function. Let s denote the social status (or index of asceticism). It depends on the assets held by an individual household compared to the

[3] An alternative way to avoid unrealistically high growth rates would be to introduce convex investment costs into the model explicitly. See *Romer* (1986).

assets held by the average household in the economy. Let the capital stock be a measure of wealth. K is the capital stock owned by the average household in this economy. Of course, $k = K$ but an individual household has only a marginal impact on the economy's capital stock and, therefore, treats ^parametrically. Thus, each household maximises

$$\int_0^\infty e^{-rt}(u(c)+s(k/K))dt \tag{2}$$

where $u(.)$ and $s(.)$ are monotonously increasing and strictly concave. $u(.)$ and $s(.)$ denote the utilities derived from consumption and from social status, respectively. For the sake of simplicity, assume a constant intertemporal elasticity of substitution, s, for consumption, i.e. $u(c) = \sigma/(\sigma-1)\ c^{1-1/\sigma}$ with $\sigma > 0$. The status-assigning function is homogeneous of degree zero in k and K and can therefore represented by a univariate function, $s(k/K)$. Homogeneity of degree zero is a reasonable assumption: if everyone's wealth is increased by the same percentage, no one is better off. Thus, ex post, $k/K = 1$ and $s(1)$ is constant. According to what has been said in the introduction, $s(.)$ can be interpreted as a measure of asceticism and piety as well as the social status of a person if we follow Rae's view of what determines social status.

Application of Pontryagin's maximum principle yields as a first-order optimality Condition

$$\frac{\dot{c}}{c} = \sigma\left(f_k - m - r + \frac{s'}{ku'}\right) \tag{3}$$

This is an extended version of the Ramseyian optimal growth formula $\dot{c}/c = \sigma(f_k - m - r)$.

Let us first look at the case where growth externalities are absent, i.e. $f_K = 0$. It is possible to derive the locus of constant consumption in the (c,k) diagram. In a normal Ramsey model, this locus would be determined by $f_k = m + r$, i.e. the vertical line in Figure 1. For the model under consideration here, the $\dot{c} = 0$ line is given by

$$f_k - m + \frac{s'}{ku'} = r \tag{4}$$

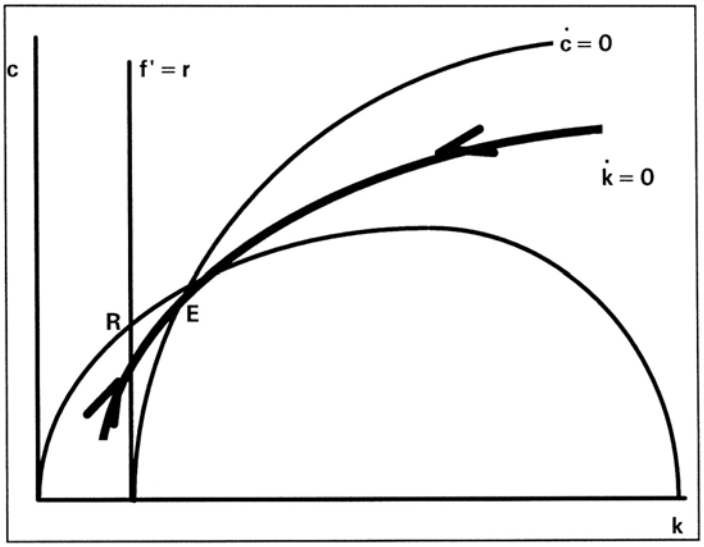

Figure 1

There are two ways in which capital is productive. One the one hand, it is used to produce consumable goods and, on the other hand, it creates happiness through the fulfilment of ascetic norms or through social status. The total marginal productivity of capital equals the discount rate. Thus the physical productivity, f_k, can be smaller than the discount rate. For small levels of consumption, u' goes to infinity and, therefore, the last term on the left-hand side of eq. (4) vanishes. This implies that the ($\dot{c} = 0$) line intersects the *k* axis at $f_k - m = r$.

The slope of the ($\dot{c} = 0$) line can be determined by totally differentiating eq. (4):

$$u''(f_k - m - r)dc + (u' f_{kk} - s(1)/k^2)dk = 0 \qquad (5)$$

It follows that the (c = 0) line is a positively sloped line in the (k,c) space. Moreover, it can be seen from eq. (3) that consumption increases if the capital stock is small, i.e. to the left of the ($\dot{c} = 0$) locus. This is shown in Figure 1. The long-run steady state, *E*, is stable in the saddle-point sense, and there is a positively sloped saddle path which is the optimal path.[4] Assume that status seeking is introduced in a society consisting of previously purely hedonic individuals. Starting from a Ramsey equilibrium, *R*, there will

[4] The figure as well as the following considerations are based on the assumption that there is only one equilibrium. This need not be the case. The consideration of multiple equilibria, however, would not add anything substantial to answering the question this paper is addressing.

be a drop in consumption down to the saddle path. Savings and capital accumulation will be increased until the new steady state *E* with higher levels of consumption and the capital stock is reached. The result that a larger capital stock is desirable in the long run follows from the fact that savings create utility, i.e. capital accumulation is undertaken for its own sake. Nonetheless, no additional growth is generated in the long run. A higher level of consumption and capital accumulation will be attained but growth rates go to zero as the path approaches the long-run equilibrium.

Proposition 1

In a Ramsey-type model with positive capital depreciation, growth rates go to zero as time approaches infinity even if status behaviour or a protestant ethic raise the incentive to accumulate capital.

III. Status-driven Economic Growth

There are two reasons for the result stated in proposition 1. First the positive rate of depreciation makes eternal impossible. Capital depreciation would exceed capital productivity if the capital stock went to infinity. Second, there are declining returns to the accumulated factor.

Let us assume in a first step that m=Q, i.e. the net productivity of capital will never become negative. A necessary and sufficient condition for permanent growth is that the ($\dot{c} = 0$) line is always below the ($\dot{k} = 0$) line or, equivalently, that $\dot{c} > 0$ along the line $c = f(k)$. Using eq. (3), this condition turns out to be

$$\frac{s'(1)}{ku'(f(k))} > r - f_k(k) \tag{6}$$

for all values of k. For a similar result derived from a model with a slightly different status-assigning function, *s(k-K)*, see Corneo/Jeanne (1995). Note that *u'(.)* is iso-elastic and assume an iso-elastic production function with $a < 1$ being the output elasticity of capital. For this specification, the condition is

$$ak^{a-1} + s'(1)k^{a/\sigma-1} > r \tag{7}$$

Condition (7) is satisfied if the marginal utility of status is sufficiently large and if $a > \sigma$, i.e. the production elasticity of capital should exceed the intertemporal elasticity of substitution. Thus, it has been established that a rat race of pious and ascetic or of status-seeking individuals may result in permanent economic growth on the macroeconomic scale.[5]

Proposition 2

Eternal growth is possible in a Ramsey economy if the marginal utility of social status is large and if the production elasticity of capital exceeds the intertemporal elasticity of substitution.

Societies driven by Protestant ethic norms or by envy and quest for status can exhibit positive growth rates forever even in a Ramsey-type model framework.[6] This confirms Max Weber's (1904) explanation of the economic success of Protestantism. But why does an individual accumulate capital even if its productivity approaches zero in the long run? The answer is that not only the physical productivity of capital in the production process matters but also its "social" productivity in the positional game.

Does the fact matter that the desire to accumulate capital is socially determine? It does. If capital accumulation were determined by individual preferences only, we would have $v'(k)$ in the last term of eq. (3) instead of $s(l)/k$ where $v(k)$ is the benefit from capital accumulation. Thus, it depends very much on the shape of the utility functions whether or not the growth rate of the economy is larger if accumulation is based on social norms than if it is based on intrinsic motives.

[5] Should the growth rate become too large, there might be problems with the convergence of the welfare integral. In these cases a catching-up criterion should be used to identify the optimal growth path. See Halkin (1974).

[6] Note that the same result can be obtained without externalities. Consider for instance the specifications $s = k$ and $v(s) = \log s$. It follows that $v' s_k = 1/k$. The resulting condition for growth is $ak^{a-1} + k^{a/b-1} > r$, which is almost identical to inequality (8). Therefore, a protestant ethic may lead to permanent growth even if there is an absolute measure of piety which is not moved by the individuals' attempts to lead a life pleasing to god.

The other way (besides a zero depreciation rate) in which eternal growth can be generated is external economies of scale in the production function. The growth rate is determined by eq. (3) again. In special case of the production function considered in the beginning, it turns out to be

$$\frac{\dot{c}}{c} = \sigma\left(a - m - r + \frac{c^{\sigma} s'(1)}{k}\right). \tag{8}$$

The following theorem follows at once.

Proposition 3

Eternal growth is possible. If the long-run growth rate is positive, then it is larger with status-seeking behaviour than without.

The first part of this proposition is due to the fact there are non-decreasing returns to scale with respect to the accumulated factor of production. The second part follows directly from eq. (3). Figure 2 illustrates the model for a constant-returns-to-scale production technology (eq. (8)).

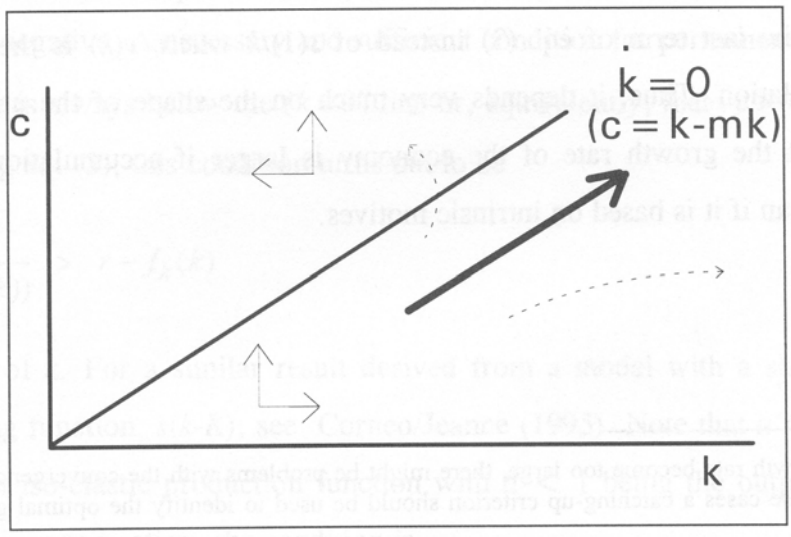

Figure 2

It should be noted that the growth rates determined by eqs. (3) and (8) are in general not socially optimal. There are two externalities, a positive externality in production and a negative externality in status behaviour. One can derive a tax on capital that corrects these two externalities. The socially optimal growth rate of the economy is

$$\frac{\dot{c}}{c} = \sigma(f_k + f_K - m - r) \tag{9}$$

and the tax on capital which establishes this growth rate is

$$t = \frac{s'(1)}{Ku'} - f_K \tag{10}$$

This tax rate can be positive or it can be negative depending on whether the negative externality of status-driven accumulation or the knowledge spillovers across the private captial stock dominate. Moreover, the tax rate may rise, decline, or in a very particular case remain constant.

IV. Modern Status Seeking

In modern times, positional goods are not capital but consumption goods. This can be taken into account in the model by making the status assigning function *s(.)*) dependent on the relative consumption of an individual, *c/C*, where *C* denotes the average clevel of consumption in society. The objective function then is

$$\int_0^\infty e^{-rt} (u(c) + s(c/C))dt \tag{11}$$

The first-order condition for optimal consumption is

$$\frac{u'' - \frac{s(1)}{c}}{u' + \frac{s(1)}{c}} \dot{c} = r + m - f_k$$

and this can be rewritten such that

$$\frac{\dot{c}}{c} = \frac{cu'+s'(1)}{cu'+\sigma s'(1)}\sigma(f_k - m - r) \tag{12}$$

In the framework of a Ramsey-type model, the ($\dot{c}$ = 0) line is determined by Ramsey's rule, $f_k - m = r$ and due to declining returns to scale, there cannot be any long-run growth. Only the transitional dynamics of the path from an initial state toward the long-run steady state are affected by status behaviour.

Matters are different if there is a positive externality from capital accumulation. Then long-run growth is feasible and the effect of status behaviour on the growth rate is described by Proposition 4.

Proposition 4

Along an endogenous growth path, a status seeking society grows at a faster (slower) rate than a society without status-seeking behaviour if the intertemporal elasticity of substitution in consumption is less (greater) than one.

The reason for this result is that the implicit intertemporal substitution elasticity of the status part of the utility function is always one.[7] The overall intertemporal substution elasticity is a weighted average of 1 and *s*. Thus, if $\sigma > 1$, the growth rate tends to be reduced. If $\sigma > 1$, the growth rate is increased.

The growth rates of consumption following from equation (12) are not constant even if the marginal productivity of capital is constant. Two cases can be distinguished. If $\sigma < 1$, then *cu'* will go to infinity as consumption grows. It follows that the fraction on the right-hand side of eq. (12) approaches 1 in the long run. If, however, $\sigma > 1$, then *cu'* goes to zero and the fraction on the right-hand side goes to $1/\sigma$. Thus,

[7] To see this, consider an optimisation problem where social status is the only objective. The result of the optimisation is that the marginal status, $s(1)/C$, grows at the rate ($r + m - f_k$). Since the marginal status of an individual is inversely related to the consumption of the average person in this society, the growth rate of consumption must be ($f_k - m - r$).

$$\lim_{t \to \infty} \frac{\dot{c}}{c} = \begin{cases} \sigma(a - m - r) & \text{for } \sigma \geq 1 \\ a - m - r & \text{for } \sigma \leq 1 \end{cases} \tag{13}$$

This implies

Proposition 5

Along an endogenous growth path, the long-term growth rate of an economy with status competition will never be less than that of an economy without status competition.

Again, the growth rate is not the socially optimal one. The socially optimal growth rate is determined by eq. (9) again. By inserting a capital tax rate t in the bracket on the right-hand side of eq. (12) and by equating the resulting growth rate to the optimal one, one can derive the capital tax rate that establishes the optimal growth rate in a society of selfish individuals who do not care about external effects. The optimal tax rate is

$$t = \frac{s'(1)(1-\sigma)}{cu' + s'(1)}(f_k - m - r) - \frac{cu' + \sigma s'(1)}{cu' + s'(1)} f_K . \tag{14}$$

This tax rate again consists of two components. The first one can be positive or negative. It corrects for the status externality. It is remarkable that the sign of this component is ambiguous despite the fact that each consumer imposes a negative externality on other consumers. At a first sight, one would, therefore, expect a tax which penalises consumption, i.e. a subsidy on capital accumulation. However, the effect of the status externality on economic growth can be positive and thus can be similar to that of an increase in capital productivity. The second component is unambiguously negative: if individuals do not take account of the positive externality they impose on each other by accumulating capital, a social planner should subsidise capital accumulation. This is, however, not correct. The accumulation of capital generates future consumption possibilities and, therefore, future externalities. There is no way to avoid these externalities. Reduction in consumption today only leads an increase in consumption

tomorrow. What one can do, is to change the consumption profile over time and this is the purpose of the tax. Frank's (1996) suggestion to tax consumption on a rather general basis can work only if there are some non-conspicuous consumption goods. If all consumption is conspicuous and driven by status motives, a tax on consumption may well be the wrong instrument and lead to welfare losses.[8]

V. Final remarks

Economies composed of status-seeking individuals may grow faster than less status-oriented societies. This is is a rather intuitive result for the case where status is generated by capital goods. But it is also possible if conspicuous consumption is the source of the status externality. As a surprising result we have that the long-term growth rate of a status-seeking society is larger than that of a society where consumption is a means to satisfy only basic needs. This does not imply, however, that status-seeking societies are better off. Usually, status-seeking activities should be penalised by taxation. A notable exception again is conspicuous consumption. Given, the intertermporal character of the savings decision, it is far from clear that consumption taxes or subsidies on savings are the correct instruments.

The model considered here may be viewed as a first step towards more elaborated models that trace back economic growth to social determinants of individual behaviour. As an addition, one might think of the introduction of human capital. The accumulation of human capital or technological knowledge can also be driven by status motives. One should expect that in the case of a rat race there will be upward shifts in the production function which increase the growth potential. Moreover, labour supply, which has been assumed to be given in this model, might be endogenised. A possible conjecture is that the labour input into the production of commodities, human capital and technological knowledge is large in societies characterised by competition for status. Status seeking

[8] Frank's (1995b) idea that insurance and social security are non-visible or unconspicuous goods is correct but the conclusion that there is a need to increase their demand at the expense of that for conspicuous goods is not. Insurance and social security are not themselves objectives of human action or arguments of a utility funtion, they are only instruments to achieve other objectives. They increase the expected level of future consumption, which is again conspicuous. Thus, the implication that consumption taxes or similar policy are unambiguously good from an economic-welfare point of view is true only in a static world.

generates workaholics. Similar considerations can be applied to the Protestant-ethic model where asceticism by itself increases the educational effort and the labour supply. This effect may be fortified by external effects, i.e. by a competition for who is the most | ascetic, pious, and abstinent.

On the whole, the model has shown that the social determinants of individual behaviour can have a substantial impact on the economic-growth potential of societies. This does not only provide a theoretical explanation for the rise of capitalism and the beginning of an era of economic growth more than two centuries ago but it may be also used to trace back international differences in economic growth to the preferences of people and to the social environment they are living in.

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